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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,657	08/28/2003	Kenichi Nakatate	Q76816	6914

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EXAMINER
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DEHGHAN, QUEENIE S

ART UNIT	PAPER NUMBER
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1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/649,657

Applicant(s)

NAKATATE ET AL.

Examiner

Queenie Dehghan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 22-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magome et al. (2002/0145711) in view of Urano et al. (English translation of JP Abstract 2000-103629).

4. Regarding claims 1, 9, and 10, Magome et al. disclose an apparatus comprising a container (6) filled with a gas containing hydrogen ([0103], figure 1), an optical element of silica glass, such as a lens, accommodated in the container, and an excimer laser emitting UV light, ([0032], [0057]), wherein the optical element and light source are aligned so that the light is incident on the optical element (figure 1). However, Magome

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et al. fail to disclose the pressure of the hydrogen gas. Urano et al. teach placing a quartz glass article in an atmosphere comprising hydrogen with a partial pressure of 0.1-10 atm (0.1-10kgf/cm<sup>2</sup>) when irradiating the glass article with UV light (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the partial pressure of hydrogen as taught by Urano et al. in the apparatus of Magome et al. in order to inhibit the increase loss of UV transmission of the optical elements, as taught by Urano et al.

5. Regarding claims 5-7, Magome et al. disclose a shut-off valve disposed on the inlet of the container that is connected to an external element for supplying the gas into the container (figure 1, 2, [0060]). Magome et al. further disclose an outlet (93) for the hydrogen gas (figure 1, [0069]).

6. Regarding claim 8, Magnum et al. fail to disclose the concentration of the hydrogen gas. Urano et al. teach using pure hydrogen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the pure hydrogen gas of Urano et al. in Magome et al. apparatus in order to ensure enough hydrogen is present to prevent the UV irradiation degradation.

7. Claims 11 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al. (6,222,610) in view of Urano et al. (English translation of JP Abstract 2000-103629).

8. Regarding claims 11, Hagiwara et al. disclose a container filled with a gas containing hydrogen (col. 2 lines 33-37, col. 12, lines 23-28). Furthermore, Hagiwara et al. disclose the container having a first light transmission window (9A in figure 1), and

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an optical element in the container (9B in figure 1), wherein the optical element is aligned to receive light incident upon the transmission window (figure 1, col. 6 lines 8-11). However, Hagiwara et al. fail to disclose the pressure of the hydrogen gas used in the container. Urano et al. teach placing a quartz glass article in an atmosphere comprising hydrogen with a partial pressure of 0.1-10 atm (0.1-10kgf/cm<sup>2</sup>) when irradiating the glass article with UV light (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the partial pressure of hydrogen as taught by Urano et al. in the apparatus of Hagiwara et al. in order to inhibit the increase loss of UV transmission of the optical elements, as taught by Urano et al.

9. Regarding claims 15-17, Hagiwara et al. disclose shut-off and check valves disposed on the inlet of the container that is connected to an external element for supplying the gas into the container. Hagiwara et al. further disclose an outlet for the hydrogen gas (figure 2, col. 7 line 64 to col. 8 line 15, abstract):

10. Regarding claim 18, Hagiwara et al. fail to disclose the concentration of the hydrogen gas. Urano et al. teach using pure hydrogen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the pure hydrogen gas of Urano et al. in Hagiwara et al. apparatus in order to ensure enough hydrogen is present to prevent the UV irradiation degradation.

11. Regarding claims 19-21, Hagiwara et al. disclose a light transmission window that is a lens (9A) and an optical element that is a lens (9B) as well (figure 2, col. 6 lines 8-11). Hagiwara et al. also disclose a container further comprising a second light

transmission window, arranged to transmit light incident upon the first transmission window after the light is transmitted through the optical element (9C in figure 2).

12. Claims 2-3 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magome et al. (2002/0145711) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 1 above, and Hagiwara et al. (6,222,610) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 11 above, and further in view of Fujinoki et al. (English machine translation of JP 2000-095535). Magome et al., Urano et al., and Hagiwara et al. fail to disclose an optical element that has been subjected to a heat treatment. Fujinoki et al. teach heat treating an optical element in a hydrogen atmosphere before accommodating in the container, wherein the pressure of the hydrogen atmosphere is 10 atm (10kgf/cm<sup>2</sup>) and the temperature is 300-450°C ([0019]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the heat treatment of Fujinoki for the optical elements placed in the container of Magome et al., Urano et al., and Hagiwara et al. in order to provide for an optical element that has high endurance for irradiation of an UV laser, as taught by Fujinoki et al.

13. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magome et al. (2002/0145711) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 1 above, and Hagiwara et al. (6,222,610) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 11 above, and further in view of Ohtsu et al. (6,793,980). Magome et al., Urano et al., and Hagiwara et al. fail to disclose the concentration of the hydrogen in the gas atmosphere.

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Ohtsu et al. teach an atmosphere of a nitrogen gas containing 3% vol. Hydrogen for irradiating a glass plate with an excimer laser (col. 10 lines 53-59, col. 7 lines 21-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the hydrogen concentration of Ohtsu et al. in the container of Magome et al., Urano et al., and Hagiwara et al. in order to provide for a reducing environment that is below the explosion limit of the hydrogen gas, as taught by Ohtsu et al.

14. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magome et al. (2002/0145711) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 1 above, and Hagiwara et al. (6,222,610) in view of Urano et al. (English translation of JP Abstract 2000-103629), as applied to claim 11 above, and further in view of Ito et al. (5,867,618). Magome, Urano and Hagiwara do not specifically disclose a partial pressure of hydrogen set in the range of 300 to 500kgf/cm<sup>2</sup>. Ito et al. teach treating an optical element in a container filled with hydrogen gas at a partial pressure in the range of 20 to 400 atm and provide an example where the hydrogen pressure is 300atm (310kgf/cm<sup>2</sup>) (col. 5 lines 61-62, col. 6 lines 1-3, 43-44). Doing so would result in an optical element that is irradiated with UV light to have an increased photoinduced refractive index change and an increase transmission of light, as taught by Ito et al. (col. 1 lines 40-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the partial pressure of hydrogen gas of 300atm, as taught by Ito et al., in the process of Magome, Hagiwara and Urano, because Ito et al. teach that the saturation of the hydrogen is effective at 300 atm.

***Response to Arguments***

15. Applicant's arguments filed November 30, 2006 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the prior art of Urano failing to suggest the continuous supply of hydrogen on page 10) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

16. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Furthermore, with respect to the motivation given for the prior art of Urano, Urano teaches the desire to utilize hydrogen gas to reduce the loss of UV transmissions in the optical elements. Magome also teaches the desire to reduce loss due to UV transmissions in the optical elements, with the losses being attributed to various elements, such as the optical element itself and the impurities within the gas present in the illumination optical path, among other things. Magome further points out impurities

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from the gas atmosphere can be deposited on the surface of the optical elements, resulting in transmission losses. Both Magome and Urano teaches how hydrogen gas is one or several gases that has a high transmittivity to be used for optical elements exposed to UV and laser lights. The motivation for using Urano is clearly supported. Similarly, Hagiwara et al. discuss the need to reduce the deposition of haze substance on the optical members in order to prevent the lowering of light transmittance of the optical element, which is same motivation as Urano.

17. In regards to the suggestion that hydrogen is a translation error in the Hagiwara patent, the Japanese application JP 9-075355 bears no relevance to the patent used and is not the claimed reference in the rejections above. Nonetheless, the prior art of Hagiwara does disclose the use of hydrogen and there is no evidence provided that would disprove this.

### ***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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